

**AMENDMENT TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. 1. (Currently Amended) In a network device configured by a configuration command, a  
A-method for regenerating a automatically re-constructing said configuration  
command based on data stored in a configuration database during parsing and  
processing of the configuration command by the network device, the method  
comprising the steps of:  
creating and storing a linear command regeneration template including a that includes  
at least one linear node template in a memory, each linear node template  
corresponding to a command element in said configuration command; and  
reconstructing regenerating said configuration command using based on said linear  
command regeneration template and based on data from a the configuration  
database.
1. 2. (Currently Amended) The method of Claim 1 wherein said the step of creating and  
storing a linear command regeneration template further comprises:  
storing a begin option node template in said at least one linear node template.
1. 3. (Currently Amended) The method of Claim 1 wherein said the step of creating and  
storing a linear command regeneration template further comprises:  
storing a next option node template in said at least one linear node template.
1. 4. (Currently Amended) The method of Claim 1 wherein said the step of creating and  
storing a linear command regeneration template further comprises:  
storing an end option node template in said at least one linear node template.
1. 5. (Currently Amended) The method of Claim 1 wherein said the step of creating and  
storing a linear command regeneration template further comprises:

3       storing a begin option node template, a next option node template, and an end option  
4       node template in said at least one linear node template.

1       6. (Currently Amended) The method of Claim 1 wherein said reconstructing the step of  
2       regenerating said configuration command using said linear command regeneration  
3       template and data from a database further comprises the step of:  
4       filtering said linear command regeneration template to locate said at least one linear  
5       node template.

1       7. (Currently Amended) The method of Claim 6 1 wherein said filtering said linear the  
2       step of regenerating said configuration command regeneration template to locate said  
3       linear node template further comprises the step of:  
4       scanning said the linear command regeneration template to find a begin option node  
5       template, said begin option node template including an identification.

1       8. (Cancelled)

1       9. (Currently Amended) The method of Claim 8 7, wherein said filtering said linear the  
2       step of regenerating said configuration command regeneration template to locate said  
3       linear node template further comprises the steps of:  
4       scanning said the linear command regeneration template to find an end option node  
5       template including that includes said identification of the begin option node template.

1       10. (Currently Amended) The method of Claim 6 wherein the step of regenerating said  
2       configuration command further comprising comprises the step of:  
3       passing said filtered linear node template from said the linear command regeneration  
4       template to an evaluate branches process.

1       11. (Currently Amended) The method of Claim 10 further comprising the step of:  
2       evaluating at least one branch in said filtered linear node template from said the linear  
3       command regeneration template by said evaluate branches process.

1 12. (Currently Amended) The method of Claim 10 ~~wherein said evaluating at least one~~  
2 ~~branch in said linear node from said linear command regeneration template further~~  
3 ~~comprises comprising the step of:~~  
4 finding a branch in said filtered linear node template.

1 13. (Currently Amended) The method of Claim 10 12, ~~wherein said evaluating at least~~  
2 ~~one branch in said linear node from said linear command regeneration template~~  
3 ~~further comprises comprising the step of:~~  
4 validating said branch ~~using said~~ based on data from said configuration database.

1 14. (Currently Amended) A memory computer-readable medium carrying one or more  
2 sequences of instructions storing a method for regenerating automatically re-  
3 constructing a network device configuration command that was used to configure a  
4 network device based on data stored in a configuration database, wherein parsing and  
5 processing of the configuration command by the network device resulted in storage of  
6 data in the configuration database, and wherein execution of the sequences of  
7 instructions by one or more processors causes said one or more processors to carry out  
8 the steps of, said method comprising:  
9 creating and storing a linear command regeneration template including a that includes  
10 at least one linear node template in a memory, each linear node template  
11 corresponding to a command element in said configuration command; and  
12 reconstructing regenerating said configuration command using based on said linear  
13 command regeneration template and based on data from a the configuration  
14 database.

1 15. (Currently Amended) The memory medium of Claim 14 wherein said one or more  
2 sequences of instructions for creating and storing a linear command regeneration  
3 template further comprises one or more sequences of instructions for:  
4 storing a begin option node template in said at least one linear node template.

- 1 16. (Currently Amended) The memory medium of Claim 14 wherein said one or more  
2 sequences of instructions for creating and storing a linear command regeneration  
3 template further comprises one or more sequences of instructions for:  
4 storing a next option node template in said at least one linear node template.
- 1 17. (Currently Amended) The memory medium of Claim 14 wherein said one or more  
2 sequences of instructions for creating and storing a linear command regeneration  
3 template further comprises one or more sequences of instructions for:  
4 storing an end option node template in said at least one linear node template.
- 1 18. (Currently Amended) The memory medium of Claim 14 wherein said one or more  
2 sequences of instructions for creating and storing a linear command regeneration  
3 template further comprises one or more sequences of instructions for:  
4 storing a begin option node template, a next option node template, and an end option  
5 node template in said at least one linear node template.
- 1 19. (Currently Amended) The memory medium of Claim 14 wherein said ~~reconstructing~~  
2 one or more sequences of instructions for regenerating said configuration command  
3 ~~using said linear command regeneration template and data from a database further~~  
4 comprises one or more sequences of instructions for:  
5 filtering said linear command regeneration template to locate said at least one linear  
6 node template.
- 1 20. (Currently Amended) The memory medium of Claim 19 ~~14~~ wherein said ~~filtering~~  
2 ~~said linear~~ one or more sequences of instructions for regenerating said configuration  
3 ~~command regeneration template to locate said linear node template~~ further comprises  
4 one or more sequences of instructions for:  
5 scanning said the linear command regeneration template to find a begin option node  
6 template, said begin option node template including an identification.
- 1 21. (Cancelled)

1 22. (Currently Amended) The memory medium of Claim 21 20, wherein said filtering  
2 said linear one or more sequences of instructions for regenerating said configuration  
3 command regeneration template to locate said linear node template further comprises  
4 one or more sequences of instructions for:  
5 scanning said the linear command regeneration template to find an end option node  
6 template including that includes said identification of the begin option node template.

1 23. (Currently Amended) The memory medium of Claim 19 wherein the one or more  
2 sequences of instructions for regenerating said configuration command further  
3 comprising comprises one or more sequences of instructions for:  
4 passing said filtered linear node template from said the linear command regeneration  
5 template to an evaluate branches process.

1 24. (Currently Amended) The memory medium of Claim 23 further comprising one or  
2 more sequences of instructions for:  
3 evaluating at least one branch in said filtered linear node template from said the linear  
4 command regeneration template by said evaluate branches process.

1 25. (Currently Amended) The memory medium of Claim 24 23 wherein said evaluating  
2 at least one branch in said linear node from said linear command regeneration  
3 template further comprises comprising one or more sequences of instructions for:  
4 finding a branch in said filtered linear node template.

1 26. (Currently Amended) The memory medium of Claim 25 wherein said evaluating at  
2 least one branch in said linear node from said linear command regeneration template  
3 further comprises comprising one or more sequences of instructions for:  
4 validating said branch using said based one data from said configuration database.

1 27-39 (Cancelled)

1 40. (Currently Amended) In a network device configured by a configuration command,  
2 an apparatus A structure for regenerating a automatically re-constructing said  
3 configuration command based on data stored in a configuration database during  
4 parsing and processing of the configuration command by the network device, the  
5 apparatus comprising:  
6 means for creating and storing a linear command regeneration template including a  
7 that includes at least one linear node template in a memory, each linear node template  
8 corresponding to a command element in said configuration command; and  
9 means for reconstructing regenerating said configuration command using based on  
10 said linear command regeneration template and based on data from a the  
11 configuration database.

1 41. (Currently Amended) The structure apparatus of Claim 40 wherein said means for  
2 creating and storing a linear command regeneration template further comprises:  
3 means for storing a begin option node template in said at least one linear node  
4 template.

1 42. (Currently Amended) The structure apparatus of Claim 41 40 wherein said means for  
2 creating and storing a linear command regeneration template further comprises:  
3 means for storing a next option node template in said at least one linear node  
4 template.

1 43. (Currently Amended) The structure apparatus of Claim 40 wherein said means for  
2 creating and storing a linear command regeneration template further comprises:  
3 means for storing an end option node template in said at least one linear node  
4 template.

1 44. (Currently Amended) The structure apparatus of Claim 40 wherein said means for  
2 creating and storing a linear command regeneration template further comprises:

3 means for storing a begin option node template, a next option node template, and an  
4 end option node template in said at least one linear node template.

1 45. (Currently Amended) The structure apparatus of Claim 40 wherein said means for  
2 ~~reconstructing regenerating said configuration command using said linear command~~  
3 ~~regeneration template and data from a database~~ further comprises:  
4 means for filtering said linear command regeneration template to locate said at least  
5 one linear node template.

1 46. (Currently Amended) The structure apparatus of Claim 45 wherein said means for  
2 filtering said linear command regeneration template to locate ~~said linear node~~  
3 ~~template further~~ comprises:  
4 means for scanning said linear command regeneration template to find a begin option  
5 node template, said begin option node template including an identification.

1 47. (New) A method of automatically re-constructing a network device configuration  
2 command based on configuration data stored in the network device, wherein parsing  
3 and processing of the configuration command resulted in storage of the configuration  
4 data, wherein the command comprises at least one command element that can have a  
5 plurality of values, the method comprising the computer-implemented steps of:  
6 creating and storing at least one linear node in a parse tree for representing said at  
7 least one command element, wherein said linear node comprises a begin  
8 option node having a single entrance; a next option node coupled to said being  
9 option node having a single entrance; and an end option node coupled to said  
10 being option node wherein said end option node has a single exit;  
11 creating and storing a linear command regeneration template in a memory, wherein  
12 the linear command regeneration template comprises information identifying  
13 how to regenerate a command; and  
14 regenerating the command based on the linear command regeneration template and  
15 based on data from said configuration data stored in the network device.

1 48. (New) The method of Claim 47, wherein creating and storing at least one linear node  
2 further comprises connecting a plurality of branches to said begin option node.

1 49. (New) The method of claim 48 wherein each branch in said plurality of branches  
2 represents a different value of said at least one command element.

1 50. (New) The method of claim 48, wherein each branch is associated with a next option  
2 node.

1 51. (New) The method of claim 47, wherein said parse tree further comprises a binary  
2 node.

1 52. (New) The method of claim 47, wherein said command includes another command  
2 element that can have a plurality of values, said method further comprising  
3 representing said another command element by another linear node in said parse tree  
4 wherein said another linear node comprises a second being option node having a  
5 single entrance connected to said exit of said end option node, a second next option  
6 node coupled to said another begin option node, and a second end option node  
7 coupled to said another begin option node wherein said another end option node has a  
8 single exit.

1 53. (New) A method of automatically regenerating a network device configuration  
2 command based on configuration data stored in the network device, wherein parsing  
3 and processing of the configuration command resulted in storage of the configuration  
4 data, the method comprising the computer-implemented steps of:  
5 creating and storing a linear command regeneration template including a linear node  
6 template, wherein the linear node template comprises a begin option node  
7 template, a next option node template, and an end option node template;  
8 regenerating the configuration command based on the linear command regeneration  
9 template and based on data from a database, by:

10 scanning the linear command regeneration template to find an end option node  
11 template that includes an identification of the begin option node template;  
12 passing the linear node template from the linear command regeneration template to an  
13 evaluate branches process;  
14 evaluating at least one branch in the linear node template from the linear command  
15 regeneration template by the evaluate branches process;  
16 finding a branch in the linear node template; and  
17 validating the branch using the configuration data stored in the network device.